e type a plus sign (+) inside this box =

PTO/SB08A (08-00)
Approved for use through 10/31/2002, OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

TRADENIA

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

Complete if Known		
Application Number	10/669,956	†
Filing Date	September 23, 2003	1
First Named Inventor	HAIYOU WANG	1
Group Art Unit	1744 1754	1,
Examiner Name	Unknown C. WHI	150
Attorney Docket Number	17462-6	]' -

	U.S. PATENT DOCUMENTS							
Examiner Initials*	Cite No. <sup>1</sup>	l Number	ment Code <sup>2</sup> nown)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear		
CAN	l	20020151604	Al	Detering etal.	10-17-2002			
SW	2	6,293,979	$\Box$	Choudhary etal.	09-25-2001			
CAN	3	6,395,197	$\Box$	Detering et al.	05-28-2002			
$\mathcal{M}^{\mathcal{T}}$	4	6,509,000	Bı	Choudhary, et al.	01-21-2003			
$\Delta V$	) 5	20020007594	ΑI	Muradov, Nazim Z.	01-24-2002			
WO	6	6,436,354		Priegnitz, et al.	08-20-2002			
			$oxed{oxed}$					
		·						

			<del></del>	FORE	IGN PATENT DOCUMEN	TS		
i	C14-		oreign Patent Do	cument	Name of Patentee or	Date of Publication of	Pages, Columns, Lines,	
Examiner Initials*	Cite No.1	Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>s</sup> (if known)	Applicant of Cited Document	Cited Document MM-DD-YYYY	Where Relevant Pessages or Relevant Figures Appear	T
		<u> </u>						L
		<del>                                     </del>				<u> </u>		L
		<del>  </del> -				ļ		$\perp$
		<del>                                     </del>	*	<del></del>		<del> </del>		$\downarrow$
		<del>                                     </del>				<del> </del>		╀
						<del> </del>		╁
						1		╁
			_		*	1		╁╴
		<del>                                     </del>	<del></del>					_

Examiner Signature	Cam	N	zu	ln	Date Considered	15	1/2/02	1
		7	7				<del>/ _ /</del>	

\*EXAMINER: Initial if reference considered, whether or not challon is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Unique citation designation number. 2 See attached Kinds of U.S. Patent Documents. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. Skind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

PTO/SB/08B (08-03)
Approved for use through 07/31/2008. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number. Complete if Known Substitute for form 1449/PTO **Application Number** 10/669,956 **INFORMATION DISCLOSURE** Filing Date September 23, 2003 STATEMENT BY APPLICANT First Named Inventor Haiyou Wang Art Unit 1744 125 (Use as many sheets as necessary) **Examiner Name** Unknewn Sheet Attorney Docket Number 2 of 17462-6

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
Can	1	P. Chen, HB., Zhang, GD. Lin, Q. Hong and K.R. Tsai "Growth of Carbon Nanotubes by Catalytic Decomposition of CH4 or CO on A Ni-MgO Catalyst", Carbon Vol. 35, No. 10-11, pp. 1495-1501, Great Britain, 1997.	
Can	2	Sakae Takenaka, Hitoshi Ogihara, Ichiro Yamanaka, Kiyoshi Otsuka, "Decomposition of methane over supported-Ni catalysts: effects of the supports on the catalytic lifetime", Applied Catalysis A: General 217 (2001) pp. 101-110.	
Can	3	M.A. Ermakova, D. Yu. Ermakov, G.G. Kuvshinov, and L.M. Plyasova, "New Nickel Catalysts for the Formation of Filamentous Carbon in the reaction of Methane Decomposition", Journal of Catalysis 187, pp. 77-84 (1999).	
Cur	4	M.A. Ermakova, D.Yu. Ermakov, G.G. Kuvshinov, "Effective catalysts for direct cracking of methane to produce hydrogen and filamentous carbon", Applied Catalysis A: General 201 (2000) pp. 61-70.	
Can	) 5	B. Monnerat, L. Kiwi-Minsker, A. Renken, "Hydrogen production by catalytic cracking of methane over nickel gauze under periodic reactor operation", Chemical Engineering Science 56 (2001) pp. 633-639.	
Cern	6	Nazim Muradov, "Hydrogen via methane decomposition: an application for decarbonization of fossil fuels", International Journal of Hydrogen Energy 26 (2001) pp. 1165-1175.	
Can	7.	M.A. Ermakova, D. Yu. Ermakov, "Ni/Si02 and Fe/Si02 catalysts for production of hydrogen and filamentous carbon via methane decomposition", Catalysis Today 77 (2002) pp. 225-235.	
car	8	Bjorn Gaudernack and Steinar Lynum, "Hydrogen from Natural Gas without Release of C02 to the Atmosphere", Int. J. Hydrogen Energy, Vol. 23, No. 12, pp. 1087-1093, 1998.	
car	9	T.V. Choudhary, C. Sivadinarayana, C.C. Chusuei, A. Klinghoffer, and D. W. Goodman, "Hydrogen Production via Catalytic Decomposition of Methane", Journal of Catalysis 199, pp. 9-18 (2001).	
Car	10	M. G. Poirier and C. Sapundzhiev, "Catalytic Decomposition of Natural Gas to Hydrogen for Fuel Cell Applications", Int. J. Hydrogen Energy, Vol. 22, No. 4, pp. 429-433, 1997.	

Examiner	/ \	/		Date 1	101.1.
Signature	Cam 1	Voju	per	Considered	12/2/04

\*EXAMINER: Initial if reference considered, whether of not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next confirmance and not

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is ettached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. OO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PTO/SB/08B (08-03)
Approved for use through 07/31/2005. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449/PTO	re required to respond to a collection of information unless it contains a valid OMB control number.  Complete if Known		
	Application Number	10/669,956	
INFORMATION DISCLOSURE	Filing Date	September 23, 2003	
STATEMENT BY APPLICANT	First Named Inventor	Haiyou Wang	
(Use as many sheets as necessary)	Art Unit	1744 1754	
	Examiner Name	Unknown C. NGUYEN	
Sheet 2 of 2	Attorney Docket Number	17462-6	

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
Card,	12	Rita Aiello, Jeffrey E. Fiscus, Hans-Conrad zur Loye, Michael D. Amiridis, "Hydrogen production via the direct cracking of methane over Ni/Si02: catalyst deactivation and regeneration", Applied Catalysis A: General 192 (2000) pp. 227-234	
can	13	Lingyu Piao, Yongdan Li, Jiuling Chen, Liu Chang, Jerry Y.S. Lin, "Methane decomposition to carbon nanotubes and hydrogen on an alumina supported nickel aerogel catalyst", Catalysis Today 74 (2002) pp. 145-155.	
car	14	T. Ishihara, A. Kawahara, A. Fukunaga, H. Nishiguchi, H. Shinkai, M. Miyaki, and Y. Takita, "CH4 Decomposition with a Pd-Ag Hydrogen-Permeating Membrane Reactor for Hydrogen Production at Decreased Temperature", Ind. Eng. Chem. Res. 2002, 41, pp. 3365-3369.	
car	15	V. R. Choudhary, S. Banerjee, and A. M. Rajput, "Continuous Production of H2 at Low Temperature from Methane Decomposition over Ni-Containing Catalyst Followed by Gasification by Steam of the Carbon on the Catalyst in Two Parallel Reactors Operated in Cyclic Manner, Journal of Catalysts 198, 136-141	
Con	16	Naresh Shah, Devadas Panjala, and Gerald P. Huffman, "Hydrogen Production by Catalytic Decomposition of Methane", Energy & Fuels 2001, 15, pp. 1528-1534.	
cond	) <sub>17</sub>	Zongquan Li, Jiuling Chen, Xixiang Zhang, Yongdan Li, Kwok Kwong Fung, "Catalytic synthesized carbon nanostructures from methane using nanocrystalline Ni", Carbon 40 (2002), pp. 409-415.	
can	18	Tiejun Zhang, Michael D. Amiridis, "Hydrogen production via the direct cracking of methane over silica-supported nickel catalysts", Applied Catalysis A: General 167 (1998) pp. 161-172.	
CAN	19	Yongdan Li, Jiuling Chen, Yongning Qin, and Liu Chang, "Simultaneous Production of Hydrogen and Nanocarbon from Decomposition of Methane on a Nickel-Based Catalyst", Energy & Fuels 2000, 14, pp. 1188-1194.	

Examiner Signature	Can Naugen	Date Considered	12/2/21	-
*EVALUED .			7 9 9 7	

\*EXAMINER: Initial if reference considered, whether of not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: